

RADIOCHEMISTRY TECHNICIAN JOB PERFORMANCE MEASURE

TASK CODE: TRC-G03

TASK: Perform Elemental Separation for Transuranic Products

NAME: _____ **SSN:** _____

REFERENCES:

1. WP 12-RL1001, Sample Tracking and Custody
2. WP 12-RL1010, Sample Preparation
3. WP 12-RL1012, Elemental Separation - Transuranic Products
4. WP 12-RL1400, Radiochemistry Laboratory Waste Management
5. CF-4.09, Transuranic Samples

TERMINAL OBJECTIVE:

Given either a solid or liquid sample prepared per WP 12-RL1010, perform elemental separation for transuranic products per WP 12-RL1012.

CONSEQUENCES OF INADEQUATE PERFORMANCE:

Improper analysis results
Loss of a sample

HAZARDS (PERSONNEL/EQUIPMENT STATUS):

None

PRE-REQUISITE TRAINING/ TASK COMPLETION:

1. CF 4.00 Series
2. TRC-G01, Prepare a Liquid Sample
3. TRC-G02, Prepare a Solid Sample
4. TRC-F04, Prepare a Resin Column
5. Radiological Worker II
6. Hazardous Waste Worker

TOOLS/EQUIPMENT (MATERIALS REQUIRED):

- | | | | |
|----|-------------------|----|-----------------------|
| 1. | Prepared reagents | 5. | Various containers |
| 2. | PH meter/pH paper | 6. | Deionized water |
| 3. | Various tracers | 7. | Various Lab equipment |
| 4. | PPE | | |

Instructions to Trainee: You shall acquire the necessary references and equipment, and complete all required documentation. Knowledge requirements shall be completed with 80% or greater accuracy. Critical step performance shall be completed with 100% accuracy.

Instructions to JPM Evaluator: The trainee is to perform the terminal objective, without assistance, on the job site. Provide clarification of requirements if requested by the trainee. You are encouraged to ask relevant questions to verify trainee understanding. If the trainee fails this JPM, clearly document the reason for failure and forward to the trainee's manager. Successful completion of this JPM shall be recorded on the trainee's qualification card.

KNOWLEDGE REQUIREMENTS:

Reference	Knowledge Requirement	Pass/Fail
5	Define a transuranic sample.	
3	State the required PPE while performing elemental separation for transuranics.	
3	Discuss the various reagents required for elemental separation of transuranics.	
3	Discuss the various tracers required for elemental separation of transuranics.	
3	State the procedural precautions and limitations for elemental separation of transuranics.	
3	State the order in which the various transuranic fractions are extracted from the sample.	
1	Describe how the Radiochemist is notified which transuranic fractions are desired for analysis.	
3,5	Discuss the purpose of the resin column in regards to performing elemental separation of transuranics.	
3	Discuss the laboratory equipment required for elemental separation of transuranics.	
3	State the labeling requirements for the various transuranic fractions while being extracted.	
3,4	Discuss the requirements for disposal of the supernate from the resin column.	

1,3	Discuss the requirements for tracking the number of aliquots.	
3	Discuss the documentation requirements during elemental separation of transuranics	
2	Discuss the stage of the prepared sample prior to beginning elemental separation for transuranics	
4	Discuss the importance of storing waste product until after sample analysis.	

PERFORMANCE REQUIREMENTS:

Reference	Performance Requirement	Pass/Fail
3	Don the appropriate PPE.#	
3	Add the appropriate tracers.#	
1,3	Track the sample aliquots as necessary.#	
3	Perform elemental separation for Americium/Uranium.#	
3	Perform elemental separation for Thorium.#	
3	Perform elemental separation for Plutonium.#	
3	Perform elemental separation for Uranium.#	
3	Perform elemental separation for Americium.#	
3	Perform elemental separation for Neptunium.#	
3,4	Discard of waste products.#	
3,4	Discard of used resin.#	
3	Label separated transuranic fractions.#	
1	Document required information in the Radiochemistry Logbook.#	
1	Complete applicable sections of the Inter-lab Tracking Form.#	

indicates a critical step

FINAL EVALUATION:

PASS

FAIL

COMMENTS:

EVALUATOR SIGNATURE: _____ **DATE:** _____

TRAINEE SIGNATURE: _____ **DATE:** _____

MANAGER SIGNATURE: _____ **DATE:** _____